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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/926,362	01/16/2002	Yasuji Hiramatsu	215240US0PCT	9235

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OBLON, SPIVAK, MCCLLELLAND, MAIER & NEUSTADT, P.C.  
1940 DUKE STREET  
ALEXANDRIA, VA 22314

EXAMINER

KOPPIKAR, VIVEK D

ART UNIT	PAPER NUMBER
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1775

DATE MAILED: 06/23/2003

12

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Applicati n No.

09/926,361

Applicant(s)

MOONEY, SEAN ST ANTHONY

Examiner

Vivek D Koppikar

Art Unit

1775

-- The MAILING DATE of this communication appears on the cover sheet with the correspondenc address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 10/21/03.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 17-63 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 32-63 is/are allowed.
- 6) ☒ Claim(s) 17-31 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 1/16/02 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## FINAL OFFICE ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 17-18, 21-27 and 30-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent Number 4,613,455 to Suzuki.

With regard to Claim 17, Suzuki teaches a ceramic heater which is bonded to a sintered substrate (Col. 1, Ln. 25-35 and Abstract). Suzuki does not recite that the sintered ceramic substrate has been sintered such that a sectional view of fracture thereof exhibits intragranular fracture.

However the examiner takes the position that the ceramic heater of Suzuki would exhibit this property since it has the same structural limitations as the instant invention.

With regard to Claim 18, the ceramic heater of Suzuki is made of silicon nitride (Col. 2, Ln. 7).

With regard to Claim 21, the ceramic heater of Suzuki is used at a temperature of between 200-1300 Celsius (Col. 8, Ln. 19-33).

With regard to Claim 22, the ceramic heater of Suzuki is used as in a car battery (electrode) (Col. 7, Ln. 32-34).

With regard to Claim 23, the ceramic heater is made up of metal particles (Figure 1).

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With regard to Claims 24-25, the grain diameters are less than 2 microns (Col. 3, Ln. 4-6).

With regard to Claims 26 and 30, the sintered ceramic substrate contains a rare earth oxide (yttrium oxide) (Table 2).

With regard to Claims 27 and 31, the mol (%) of the rare earth oxide is 1.75% so the examiner takes the position that the rare oxide content and the oxygen content is less than 1% (Table 2).

3. Claims 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki as applied to Claim 17 above and in further view of US Patent Number 5,350,720 to Kawada et al.

Suzuki does not recite that the ceramic substrate bonded to the ceramic heater is in a disk-shape nor that the diameter of the disc is greater than 200 mm or the thickness is 20 mm or less.

However this is a standard form for a ceramic substrate as shown by Kawada which teaches a ceramic substrate in the form of a circular disc in which the diameter is greater than 5 inches in diameter (200 millimeters) and the thickness is 10 mm (Col. 2, Ln. 67-Col. 3, Ln. 13).

4. Claims 28-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki as applied to Claim 17 above and in further view of Japanese Patent Number 09-124383 (hereafter referred to as JP'383).

Suzuki does not teach that sulfur is in the sintered ceramic substrate.

JP'383 teaches a aluminum nitride substrate which contains sulfur at a concentration of less than 250 ppm and this results a in a substrate with improved reliability when used as a plated layer and resistance to the formation of pinholes (Translated Abstract).

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At the time of the invention, one of ordinary skill in the art would have been motivated to add sulfur to the ceramic sintered of Suzuki with the expectation of increasing the reliability of the substrate when used as a plated layer and improve resistance to the formation of pinholes as recited in JP'383.

***Response to Amendment***

5. Claims 15 and 16 were indicated as allowable in the office action dated October 21, 2002. These claims have now been cancelled and replaced by claims 32 and 48 respectively (they are verbatim). Claims 33-47 depend on Claim 32 while Claims 49-63 depend on Claim 48. Claims 32-63 are allowable over the prior art of record for reasons set forth in the first office action.

6. Applicant's arguments with respect to claims 1-14 have been considered but are moot in view of the new grounds of rejection.

*Conclusion*

6. Applicant's amendment necessitated the new ground of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Vivek Koppikar** whose telephone number is **(703) 305-6618**. The examiner can normally be reached on Monday-Friday from 8 AM to 5 PM, Eastern Time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah Jones, can be reached at (703) 308-3822. The fax phone numbers for the organization where this application or proceeding are assigned are (703) 305-7718 for regular communications and (703) 305-3599 for After Final communications. The examiner's desktop fax number is (703) 746-3983.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

  
Vivek Koppikar

  
DEBORAH JONES  
SUPERVISORY PATENT EXAMINER

6/10/03